

**MICHIGAN ENVIRONMENTAL SCIENCE BOARD
LEAD PANEL**

**MEETING SUMMARY
MONDAY, May 2, 1994
HOLDEN HALL, CONFERENCE ROOM C-231
MICHIGAN STATE UNIVERSITY
EAST LANSING, MICHIGAN**

PANEL MEMBERS PRESENT:

Dr. Jonathan Bulkley, Chair
Dr. George Wolff
Dr. Raymond Demers

PANEL MEMBERS ABSENT:

Dr. David Long

BOARD STAFF PRESENT:

Mr. Keith Harrison, MESB Executive Director
Mr. Jesse Harrold, Environmental Officer
Ms. Shirley Willis, Administration Officer
Mr. Alex Morese, Student Intern

I CALL TO ORDER

Dr. Jonathan Bulkley, Chair, called the meeting of the Michigan Environmental Science Board (MESB) Lead Panel to order at 1:18 p.m.

II EXECUTIVE DIRECTOR'S REPORT

Mr. Keith Harrison, MESB Executive Director, discussed a number of papers included in the Panel member packets for the meeting. He also announced that the Michigan Department of Natural Resources (MDNR) has just completed a paper summarizing long term trends in ambient air lead concentrations in Michigan, which will be sent to the Panel.

Dr. Bulkley inquired about proposed legislation regarding childhood immunization that may include testing children for lead. He asked Mr. Harrison to see if a copy of the legislation might be obtained. Mr. Harrison said he would research the status of the bills.

III PRESENTATIONS

Dr. Rolf Deininger, University of Michigan School of Public Health, made a presentation on lead in public drinking water supplies. A copy of his presentation handout is contained in Attachment 1.

Dr. Deininger stated that there are 200,000 houses in Detroit being served by lead service lines (pipes carrying water from main water pipes to individual buildings), in spite of the fact that the relationship between lead poisoning and lead water pipes has been known for over 100 years. The current drinking water standard is 15 ug/l. The U.S. Food and Drug Administration is considering a recommendation that humans not ingest more than 6 ug/l per day. As an alternative to replacing all the lines or treating the water at the user end, Dr. Deininger is trying to obtain funding this summer to develop a liner for lead water pipes.

The Detroit Health Department has sampled faucet water coming from both lead and copper service lines and found that about 62% of the lead service lines and 92% of copper service lines produced lead concentrations of less than 15 ppm. Dr. Deininger indicated that on face value, it seemed puzzling that nearly 40% of the lead piped water was acceptable, and that nearly 10% of the copper piped water, which should not show lead contamination, was not. Based on his research in Detroit, the major determinant of lead concentration in a house is the water meter, in-house plumbing and the faucet rather than the service line. Both zinc and brass components of faucets and water meters contain lead impurities that leach into water as it sits. Brass water meters are allowed by regulation to contain up to 8% lead. Plastic water meters were tried by Detroit several years ago, but problems with stripping the threads and cracking under stress caused the city to return to brass meters. None of the components contain warnings about lead content. In addition, according to Dr. Deininger, water sampling methods are generally inadequate. The first liter taken from the kitchen faucet in the morning does not properly capture the contribution of the service line. National Science Foundation (NSF) standards for water used in testing - pH of 8, alkalinity of 55 ppm, and a free chlorine residual of 2 mg/l - are not often found in the real water supply, so are of little use in testing.

Mr. Marco Bianchi, MDNR Air Quality Division, asked whether mineral deposits in galvanized piping protects water from leaching lead. Dr. Deininger said work conducted in Detroit has shown that lead will leach less from old, encrusted pipes than from new lead pipes, so there would be some protection resulting from a build up of minerals in the pipe. However, due to turbulence in the pipes, the mineral deposits will periodically flake off, allowing the leaching of lead.

Bob Sills, MDNR, inquired about the cost of replacing lead service lines in 200,000 Detroit homes. Judy Huddleston, Detroit Water Department, stated that the cost is estimated at \$2,000 a line, for a total cost of \$60 million a year for 7 years. Mike Kovach, Michigan Department of Public Health (MDPH) Water Supply Division, said that the law allows for replacement over a 15, rather than 7, year period. Dr. Deininger

commented that it will be difficult to decide whose lines should be replaced first and who should continue to drink leaded water over that period of time.

Dr. Demers asked for confirmation of the number of Detroit homes with lead pipes inside. Mr. Kovach, MDPH, stated that MDPH's monitoring over the past few years has turned up just a handful of homes with inside lead pipes, fewer than 5 out of 1,000.

Dr. Wolff asked whether the problem with submersible pumps with brass parts was with the water sitting in the pump or with all the water being pumped through. Dr. Deininger answered that the approximately 1 gallon of water that sits in an inactive pump picks up very large amounts of lead and that contact time is very important.

Ms. Deb McKenzie-Taylor, MDNR, asked about lead packing used in well water screen installation. Mr. Kovach said that the practice of using lead packing for wells was banned 3 years ago.

Dr. Bulkley asked Ms. Huddleston whether Detroit was considering a return to plastic water meters. She responded that no decision has been made yet, but alternatives are being considered.

Dr. Rolf Deininger, University of Michigan School of Public Health, made a presentation on lead in public drinking water supplies. A copy of his presentation handout is contained in Attachment 1.

Joe Kilpatrick, lead abatement contractor from Chicago, Illinois, presented an overview of the lead abatement program.

Mr. Kilpatrick stressed that abatement of lead and asbestos are entirely different situations and that techniques used for asbestos will not necessarily work for lead. Considerable lead dust is generated during lead abatement programs. This dust has to be isolated and contained to that work area. A negative pressure fan is used to force exhaust from the work area through hepa filters to collect the lead dust. Hepa filters are fine membrane filters impermeable to dust. The filters plug up very quickly with lead dust. Clean up of the work area is completed daily using a hepa vacuum. Lead abatement workers take a 3-stage decontamination shower after their work shift. Final cleanup of the area abated includes the use of a trisodium phosphate, or a like substitute product, wash. There is evidence that the effectiveness of cleaning products will vary considerably between products. Final inspection for a lead abatement area is done by wiping several 1 ft² areas with non-alcohol disposable baby wipes. The wipes are analyzed by atomic absorption and the findings are expressed in mg/ft². If lead dust is found above a certain limit (e.g., 500 mg/ft² for window sills; 200 mg/ft² for floors), the area must be cleaned again.

The test for lead for wall surfaces is performed by using a x-ray fluorescent (XRF) test. This test reads the intensity of the reflected fluorescent to determine lead content; the higher the reflectance, the higher the lead content. Core samples are taken of wood surfaces to determine if the wood is lead contaminated.

Flame paint removal is not approved, because it releases lead into the air. Heat stripping is permitted in Illinois, however, temperatures cannot be above 700 degrees Fahrenheit. At these temperatures, the effectiveness of the process to remove paint is diminished. Sometimes structural removal is more efficient than paint removal. The old red lead primer used on structural steel must be ground or blasted off. The procedure to remove paint on an exterior wall is to wet scrape the paint off, wet swab the surface and then encapsulation. When engaged in exterior paint removal, 8 feet of polyethylene film is extended out from the treated wall for every story that is being treated. Encapsulation is used even if the surface is going to be covered with siding.

Two regulations drive the lead abatement program, Title 10 (an amendment to the Residential Lead Based Paint Hazard Reduction Act) and OSHA's Lead Exposure in Construction Interim Final Rule. The USEPA provides training in lead abatement procedures.

Dr. Demers asked if the reclamation business was subject to the weather. Mr. Kilpatrick answered the reclamation business is totally at the mercy of the weather, namely rain and high wind.

Dr. Bulkey asked about costs of paint removal, and treatment of home exteriors and interiors. Mr. Kilpatrick replied that the cost for exterior lead abatement for a 25 ft x 35 ft 2-story house is about \$25,000 (\$13/ft²). The interior lead abatement cost for a 9 ft x 13 ft room for example, including the trim would be about \$7,000 (\$12/ft²).

Dr. Bulkey asked if schools are of major concern for lead paint removal and what would be done if a child were found with an elevated blood lead level. Mr. Kilpatrick stated that at the extreme, he had been in several Chicago schools where lead paint chips were lying on the floor in piles. Once it is confirmed that the school (rather than the child's home, for instance) is the reason for the lead poisoning, the school takes action to correct the problem. Most school lead abatement efforts are source specific, and confined to the area frequented by the affected child is treated. If the home is found to be at fault, a citation is issued to the child's parents or guardians. A 10 day limit is given to start corrective actions or the city will remove the child from the premises.

Dr. Deininger asked if drinking water in schools is tested for lead. Mr. Kilpatrick replied lead water testing is incorporated in a city-wide drinking water testing program. Drinking water fountains in schools have been noted as a potential source of lead in the school's drinking water.

Dr. Bulkey asked whether the 6 million dollar HUD grant targeted the most cost effective means of abating the lead paint problem. Mr. Kilpatrick replied that currently, paint removal is the only acceptable means. He added that wooden coverings are being considered with the possible future consideration for encapsulation.

IV PUBLIC COMMENT AND QUESTIONS

Mike Kovach, MDPH Water Supply Division, indicated that over the years, the USEPA has cited that drinking water contributes only up to 20% of an individual's total lead exposure. Dr. Demers asked if there is a reference for that figure. Mr. Kovach stated that, to his knowledge, the USEPA has never verified its estimate. He pointed out that the water supply industry and MDPH want to emphasize that, although there are components of any water distribution system that can contribute lead under certain conditions of stagnation, leaching, etc., records show that under normal consumption patterns, the relative contributions of lead from drinking water are low. Dr. Wolff inquired that if 20% of the population's total exposure to lead is from drinking water, what are the sources for the other 80%. Mr. Kovach replied that it comes from dust, air, paint chips, food service, etc.

Dr. Demers stated that several years ago, while repairs were being made on the Blue Water Bridge over the St. Clair River, sanding of old paint off the bridge showered down on the community of Port Huron. He pointed out that if there is a report, it would be a good case example of environmental exposure. Mr. Harrison indicated that he would find out if such a report was prepared.

Dr. Bulkley discussed a draft outline for the report. Dr. Demers indicated that the draft should address responses specifically to the Governor's 3 directives, and provide for a discussion on how Michigan's lead issues coincide with national lead issues. Mr. Harrison stated that the outline also should contain the usual components such as general introduction, references cited, appendices, etc. He reminded the Panel to provide him with copies of any and all literature that they plan to use so that he can ensure that it gets included in the references cited section of the report. Dr. Wolff asked Mr. Harrison to contact Paul Shutt, MDNR Air Quality Division, and ask for the DNR's SIP report from 1980 that he had received.

Dr. Bulkley stated that the CDC plan provides guidelines which might be useful as an outline for the Panel's preparation of the final report. He pointed out the report could be looked at to determine how many of the suggested tasks have been carried out in Michigan. Mr. Harrison indicated that he would follow up on this issue.

Mr. Harrison stated that he is concerned about the ultra-clean technique for sampling and analysis of metals and the impact that it may have on historical lead data. Both Drs. Wolff and Demers indicated that the issue probably is of more concern in the analytical rather than the sampling phase. Dr. Demers suggested that Mr. Harrison contact Dr. Joel Pounds, who may be able to provide some background on how the water analysis for lead would have changed in the last 10 to 20 years.

Dr. Bulkley asked the MESB staff to obtain census information on Michigan children in the 0 to 6 age group. Mr. Harrison stated that staff could obtain the data for the state and some of the larger cities such as Detroit.

Dr. Bulkley suggested that the next Panel meeting be convened in Detroit and that representatives from the Detroit Health Department and Children's Hospital be obtained to present background information on their lead programs. Dr. Demers volunteered to find meeting space and suggested that Dr. John Waller from the Detroit Health Department's Lead Screening Program and Dr. Rolf Kauffman from Children's Hospital, be secured as speakers. Dr. Demers also indicated that he would like to hear from Dr. Kenneth Rosenman, Michigan State University Department of Internal Medicine, who could provide an overview of the federal Occupational Safety and Health Administration's policy and the construction trade's policy on lead.

V ADJOURNMENT

The meeting was adjourned at 4:23 p.m.

Keith G. Harrison, M.A., R.S., Cert. Ecol.
Executive Director
Michigan Environmental Science Board